Amendments to the Specification

Page 1, before line 1, amend the title as follows.

IMAGE FORMING APPARATUS AND PROCESS CARTRIDGE ~~FOR USE IN THE SAME~~ INCLUDING FLEXIBLE MEMBER

Page 10, beginning with line 11, amend the paragraphs as follows.

FIG. 7 is an enlarged view showing how a ~~Mylar~~ MYLAR sheet included in the illustrative embodiment is held in contact with the drum;

FIG. 8 is a table listing the results of experiments conducted to determine the optimum pressure with which the ~~Mylar~~ MYLAR sheet contacts the drum;

FIG. 9 is a table listing the results of experiments conducted to determine the optimum surface roughness Rz of the contact surface of the ~~Mylar~~ MYLAR sheet contacts the drum;

FIG. 10 is a table listing the results of experiments conducted to determine the optimum thickness of the ~~Mylar~~ MYLAR sheet;

FIG. 11 is a table listing the results of experiments conducted to determine the optimum contact angle of the ~~Mylar~~ MYLAR sheet with the drum;

Page 37, beginning with line 20, amend the paragraphs as follows.

With the configuration described so far and not using a cleaning blade, it is impossible to fully obviate filming conventionally controlled by a cleaning blade. In light of this, as shown in FIG. 6, the illustrative embodiment additionally includes a ~~Mylar~~ MYLAR (polyester) sheet or flexible member 46 forming part of the toner holding device 40. The ~~Mylar~~ MYLAR sheet 46 is affixed to the upstream end of a casing 47 in the direction of movement of the drum surface such that a flat surface included in the end portion of the ~~Mylar~~ MYLAR sheet 46 contacts the surface of the drum 1.

As shown in FIG. 7, the flat surface of the ~~Mylar~~ MYLAR sheet 46 mentioned above is formed with a plurality of (five in the illustrative embodiment) elongate grooves 46a each extending perpendicularly to the direction of movement of the drum surface. With this configuration, the ~~Mylar~~ MYLAR sheet 46 shaves the surface of the drum 5 with the downstream edges 46b of the grooves 46 in the direction of movement of the drum surface a plurality of times. The ~~Mylar~~ MYLAR sheet 46 can therefore shave off additives deposited on the drum 1 in the form of a film by contacting the drum 1 with lower pressure than a cleaning blade.

When use is made of highly circular, spherical toner grains as in the illustrative embodiment, even a cleaning blade cannot fully remove residual toner grains because such toner grains pass the position where the cleaning blade and drum 1 contact each other. This is also true with the ~~Mylar~~ MYLAR sheet 46. In this sense, the ~~Mylar~~ MYLAR sheet 46 plays the role of means for removing additives forming a film on the drum 1 rather than cleaning means for removing residual toner grains while the toner holding device 40 and developing device 5 play the role of cleaning means.

To shave off additives forming a film on the drum 1, the ~~Mylar~~ MYLAR sheet 46 must contact the drum 1 with some pressure. For this purpose, in the illustrative embodiment, the ~~Mylar~~ MYLAR sheet 46 is implemented as a sheet member having a suitable degree of elasticity and formed of polyethylene terephthalate (PET). The ~~Mylar~~ MYLAR sheet 46 is affixed to the casing 47 and belt such that its flat surface is pressed against the drum 1.

The contact pressure of the ~~Mylar~~ MYLAR sheet 46, contacting the drum 1, should preferably be between 0.1 N and 0.8 N, as determined by experiments. FIG. 8 shows the results of experiments conducted to determine the contact pressure. As shown, contact pressure lower than 0.1 N was too low to sufficiently shave off additives forming a film on the drum 1 while contact pressure higher than 0.8 N noticeably scratched the drum 1.

It was experimentally found that the grooves 46a of the ~~Mylar~~ MYLAR sheet 46 should preferably have surface roughness Rz of 20 or above, but 40 or below. More specifically, as shown in FIG. 9, surface roughness Rz below 20 caused an excessive amount of toner to fill up the grooves 46a for thereby degrading the shaving effect in a short period of time. Also, surface roughness Rz above 40 sometimes caused the grooves 46a to noticeably scratch the drum 1.

Further, experiments showed that the thickness of the ~~Mylar~~ MYLAR sheet 46 should preferably be between 0.1 mm and 0.2 mm. More specifically, as shown in FIG. 10, thickness below 0.1 mm made the elasticity of the PET sheet too short to implement the contact pressure stated above while thickness above 0.2 mm made the above elasticity too high to implement the desired contact pressure and noticeably scratched the drum 1.

Moreover, the ~~Mylar~~ MYLAR sheet 46 should preferably contact the drum 1 at an angle of between 20° and 100°. This contact angle refers to one between the flat portion of the ~~Mylar~~ MYLAR sheet 46 in the absence of the drum 1 and a line tangential to the drum 1 and intersecting the flat portion. More specifically, as shown in FIG. 11, a contact angle below 20° made it difficult to implement the desired contact pressure and prevented the ~~Mylar~~ MYLAR sheet 46 from sufficiently shaving off additives from the drum 1. Also, a contact angle above 100° sometimes caused the drum 1 to roll up the ~~Mylar~~ MYLAR sheet 46.

As stated above, the toner holding device 40 and developing device 5 constitute bladeless type of cleaning means not using a cleaning blade. This, coupled with the ~~Mylar~~ MYLAR sheet 46 formed with the grooves 46a, achieves the advantages of the bladeless type of cleaning means, i.e., the extension of the life of the drum 1 and the reduction of drum drive load.

Page 61, beginning with line 2, amend the abstract as follows.

An image forming apparatus of the present invention includes a ~~Mylar~~ sheet affixed at one edge portion and including a flat surface in the other edge portion. The flat surface is formed with a plurality of grooves each extending over the image forming range of a photoconductive drum perpendicularly to the direction in which the surface of the drum moves. The ~~Mylar~~ sheet is deformed such that the flat portion contacts the surface of the drum. In this condition, the downstream edges of the grooves in the above direction shave off the surface of the drum a plurality of times during one rotation of the drum, thereby obviating filming on the drum.